

## WHAT IS CLAIMED IS:

1. A method of optimizing the performance of a mobile radio system in which different transfer modes correspond to different bit rates corresponding to different modulation schemes and the protocol architecture uses a radio link control layer that can operate in an acknowledged mode or in a non-acknowledged mode, in which method, in a transfer mode corresponding to the highest bit rates, acknowledgment information is sent in the non-acknowledged mode from a radio link control receiver to a radio link control sender and can be taken into account by the radio link control sender.
2. A method according to claim 1, wherein said transfer modes include the General Packet Radio Service (GPRS) mode and the Enhanced General Packet Radio Service (EGPRS) mode.
3. A method according to either claim 1 or claim 2, wherein said acknowledgment information includes a Starting Sequence Number (SSN) and a Received Block Bitmap (RBB) sent in an acknowledgment/non-acknowledgment (ACK/NACK) message.
4. A method according to any one of claims 1 to 3, wherein said acknowledgment information is taken into account by an RLC sender to estimate transmission quality.
5. A method according to claim 4, wherein said transmission quality estimate is used for radio link adaptation.
6. A mobile station including means for implementing a method according to any one of claims 1 to 5.
7. Mobile radio network equipment, including means for

implementing a method according to any one of claims 1 to 5.

8. A mobile radio system including means for implementing  
5 a method according to any one of claims 1 to 5.